

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

PUBLICATION NUMBER : 10272370  
PUBLICATION DATE : 13-10-98

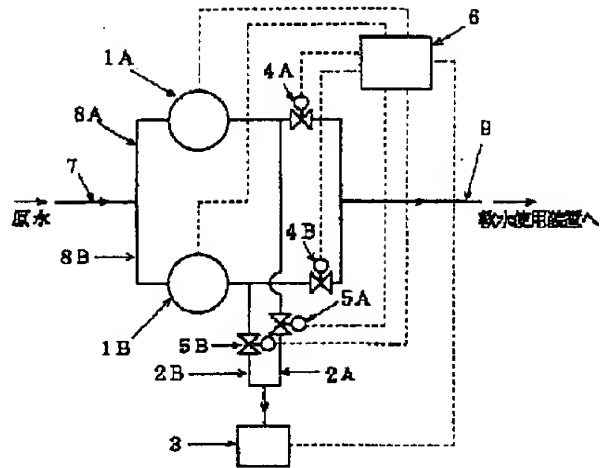
APPLICATION DATE : 28-03-97  
APPLICATION NUMBER : 09095064

APPLICANT : SAMSON CO LTD;

INVENTOR : ICHIKI NAOKI;

INT.CL. : B01J 47/14 B01J 49/00 C02F 1/42

TITLE : SOFTENING DEVICE OF PARALLEL INSTALLATION CAPABLE OF DETECTING ABNORMALITY IN EARLY STAGE, AND METHOD FOR OPERATION THEREOF



BEST AVAILABLE COPY

ABSTRACT : PROBLEM TO BE SOLVED: To prevent hard water from being sent to a device using soft water, by detecting a regeneration abnormality in its early stages and making it possible to deal with it promptly in a softening device of parallel installation.

SOLUTION: This softening device is made up of plural softening units 1A, 1B which are installed in parallel among pipes 8A, 8B as branches of an untreated water pipe, and water supply control means 4A, 4B which select between the softening units 1A, 1B for supplying water to a device using soft water. Each of the softening units 1A, 1B is regenerated in such a timing manner that the regeneration process is performed while the other softening device supplies water to avoid the simultaneous regeneration by both units 1A, 1B. In this case, a hardness measuring device 3, which measures the hardness of water treated by the respective softening devices 1A, 1B and sampled water control means 5A, 5B, which sample the water to the hardness measuring device 3 and switches the softening units 1A, 1B are provided. This hardness measuring device 32 measures the hardness of the treated water produced by the softening 1A or 1B, which is through with the regeneration process and is in a standby position and outputs an abnormality when the hardness of the treated water is above a specified value so that the abnormality is to be dealt with prior to the start of sending the water for use.

COPYRIGHT: (C)1998,JPO